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Dkt. STL11874  
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Stephen J. Sicola and Charles M. Sander  
Assignee: SEAGATE TECHNOLOGY LLC  
Application No.: 10/817,617 Group No.: 2186  
Filed: 04/02/2004 Examiner: P. Bataille  
For: MANAGED RELIABILITY STORAGE SYSTEM AND METHOD

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TRANSMITTAL OF APPEAL BRIEF  
(PATENT APPLICATION-37 C.F.R. § 41.37)

1. Transmitted herewith, is the APPEAL BRIEF in this application, with respect to the Notice of Appeal filed on October 12, 2006.

2. STATUS OF APPLICANT

This application is on behalf of other than a small entity.

3. FEE FOR FILING APPEAL BRIEF

Pursuant to 37 C.F.R. § 41.20(b)(2), the fee for filing the Appeal Brief is:

Appeal Brief fee due for other than small entity

\$500.00

4. EXTENSION OF TERM

The proceedings herein are for a patent application and the provisions of 37 C.F.R. § 1.136 apply.

Applicant petitions for an extension of time under 37 C.F.R. § 1.136 (fees: 37 C.F.R. § 1.17(a)(1)-(5)) for one month:

Fee:

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Randall K. McCarthy

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RE: Application No. 10/817,617  
In re application of: Stephen J. Sicola, et al.  
Assignee: SEAGATE TECHNOLOGY LLC  
Dkt. No.: STL11874

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DEC 14 2006 *PATENT*  
Dkt. STL11874

In re Application of: Stephen J. Sicola and Charles M. Sander  
Assignee: SEAGATE TECHNOLOGY LLC  
Application No.: 10/817,617 Group Art: 2186  
Filed: April 2, 2004 Examiner: P Bataille  
For: MANAGED RELIABILITY STORAGE SYSTEM AND METHOD

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Commissioner for Patents  
P. O. Box 1450  
Alexandria, Virginia 22313-1450

ATTENTION: Board of Patent Appeals and Interferences

Sir:

## APPELLANT'S BRIEF

This Brief is in furtherance of the Notice of Appeal that was filed in this case on October 12, 2006. The required fees, any required petition for extension of time for filing this Brief, and the authority and time limits established by the Notice of Appeal are dealt with in the accompanying TRANSMITTAL OF APPEAL BRIEF.

## CERTIFICATION UNDER 37 C.F.R. §§ 1.8(a)

I hereby certify that, on the date shown below, this correspondence is being:

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Signature

Diana C. Anderson

(type or print name of person certifying)

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## 5. TOTAL FEE DUE

The total fee due is:

Appeal brief fee	\$500.00
Extension of time fee	\$120.00
<b>TOTAL FEE DUE</b>	<b>\$620.00</b>

## 6. FEE PAYMENT

Authorization is hereby made to charge the amount of \$620.00 to Credit card as shown on the attached credit card information authorization form PTO-2038.

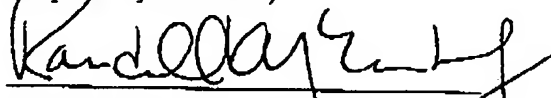
## 7. FEE DEFICIENCY

If any additional extension and/or fee is required, and if any additional fee for claims is required, charge Deposit Account No. 06-0540.

Date:

12/14/06

Respectfully submitted,



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This brief contains these items under the following headings, and in the order set

forth below:

- I. REAL PARTY IN INTEREST
- II. RELATED APPEALS AND INTERFERENCES
- III. STATUS OF CLAIMS
- IV. STATUS OF AMENDMENTS
- V. SUMMARY OF CLAIMED SUBJECT MATTER
- VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL
- VII. ARGUMENT
- VIII. CLAIMS APPENDIX
- IX. EVIDENCE APPENDIX
- X. RELATED PROCEEDINGS APPENDIX

### I. REAL PARTY IN INTEREST

The real party in interest in this Appeal is Seagate Technology LLC.

### II. RELATED APPEALS AND INTERFERENCES

There are no other appeals or interferences that will directly affect, or be directly affected by, or have a bearing on the Board's decision in this Appeal.

### III. STATUS OF CLAIMS

The status of the claims in this application is:

<u>Claim</u>	<u>Status</u>
42. (Previously presented)	Independent.
43. (Previously presented)	Depends from claim 42.
44. (Previously presented)	Depends from claim 42.
45. (Previously presented)	Depends from claim 42.
46. (Previously presented)	Depends from claim 42.
47. (Previously presented)	Depends from claim 42.
48. (Previously presented)	Depends from claim 42.
49. (Previously presented)	Depends from claim 42.
50. (Previously presented)	Depends from claim 49.
51. (Previously presented)	Depends from claim 49.
52. (Previously presented)	Depends from claim 42
53. (Previously presented)	Depends from claim 52
54. (Previously presented)	Depends from claim 42.

55. (Previously presented)	Independent.
56. (Previously presented)	Depends from claim 55.
57. (Previously presented)	Depends from claim 55.
58. (Previously presented)	Depends from claim 55.
59. (Previously presented)	Depends from claim 55.
60. (Previously presented)	Depends from claim 55.
61. (Previously presented)	Depends from claim 55.
62. (Previously presented)	Depends from claim 55.
63. (Previously presented)	Depends from claim 55.
64. (Previously presented)	Depends from claim 55.
65. (Previously presented)	Depends from claim 55.
66. (Previously presented)	Depends from claim 55.
67. (Previously presented)	Depends from claim 66.
68. (Previously presented)	Depends from claim 55.
69. (Previously presented)	Independent.
70. (Previously presented)	Depends from claim 69.

#### A. TOTAL NUMBER OF CLAIMS IN APPLICATION

Claims in the application: 42-70.

#### B. STATUS OF ALL THE CLAIMS

1. Claims canceled: 1-41.
2. Claims withdrawn from consideration but not canceled: None
3. Claims pending: 42-70.
4. Claims allowed: None
5. Claims rejected: 42-70.
6. Claims objected to: None

#### C. CLAIMS ON APPEAL

Claims now on appeal: 42-70.

#### IV. STATUS OF AMENDMENTS

No post-final amendments have been submitted.

## V. SUMMARY OF CLAIMED SUBJECT MATTER

The embodiments of the present invention as recited by the language of independent claims 42, 55 and 69 are generally directed to a method and apparatus for reliability management of a data storage system.

Independent claim 42 generally features a method comprising steps of monitoring for an occurrence of an event associated with operation of a distributed data storage system (such as storage system 200 in FIG. 2; decision step 306 in FIG. 3; and in the specification at page 9, line 28 to page 10, line 8), characterizing the event as a usage event related to a usage rate of said system (such as step 308 in FIG. 3; and at page 10, lines 10-13) or a non-usage event not related to a usage rate of said system (such as step 308 in FIG. 3; and at page 10, lines 29-30), adjusting a parameter of the data storage system when the event is characterized as a usage event (such as step 310 in FIG. 3; and at page 10, lines 13-29), and executing a diagnostic routine when the event is characterized as a non-usage event (such as step 310 in FIG. 3; and page 11, lines 22-28).

Independent claim 55 generally features a distributed data storage system (such as 200 in FIG. 2) comprising at least one processor (such as 202, 204 and 206 in FIG. 2; and page 8, lines 17-22) having associated programming (such as 210, 212, and 214 in FIG. 2) to monitor for an occurrence of an event associated with operation of said system (such as step 306 in FIG. 3; and at page 9, line 28 to page 10, line 8), to characterize the event as a usage event related to a usage rate of said system (such as step 308 in FIG. 3; and at page 10, lines 10-13) or a non-usage event not related to a usage rate of said system (such as step 308 in FIG. 3; and at page 10, lines 29-30), to adjust a parameter of the data storage system when the event is characterized as a usage event (such as step 310 in FIG. 3; and at page 10, lines

13-29), and to execute a diagnostic routine when the event is characterized as a non-usage event (such as step 310 in FIG. 3; and page 11, lines 22-28).

Independent claim 69 generally features an apparatus comprising a distributed data storage system (such as 200 in FIG. 2) comprising a host system (such as 202), a storage controller (such as 204), a plurality of data storage devices (such as 206), and first means (such as 210, 212 and 214) for monitoring for an occurrence of an event associated with operation of a distributed data storage system (such as step 306 in FIG. 3; and at page 9, line 28 to page 10, line 8), for characterizing the event as a usage event related to a usage rate of said system (such as step 308 in FIG. 3; and at page 10, lines 10-13) or a non-usage event not related to a usage rate of said system (such as step 308 in FIG. 3; and at page 10, lines 29-30), for adjusting a parameter of the data storage system when the event is characterized as a usage event (such as step 310 in FIG. 3; and at page 10, lines 13-29), and for executing a diagnostic routine when the event is characterized as a non-usage event (such as step 310 in FIG. 3; and page 11, lines 22-28).

## **VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL**

1. The first grounds for rejection presented for review on appeal is the final rejection of claims 42-46, 52-53, 55-59, 64 and 66-67 and 69-70 under 35 U.S.C. §102(e) as being anticipated by U.S. Published Patent Application No. US 2001/0056362 to Hannagan et al. ("Hannagan '362").



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2. The second grounds for rejection presented for review on appeal is the final rejection of claims 47-51, 54, 60-63, 65 and 68 under 35 U.S.C. §103(a) as being obvious over Hannagan '455, alone or in combination with various references including U.S. Patent No. 6,138,207 to Rossum ("Rossum '207"), U.S. Patent No. 6,073,105 to Sutcliffe et al. ("Sutcliffe '105"), and U.S. Patent No. 5,206,497 to Lee ("Lee '497").

The claims stand or fall together and will thus be grouped together for purposes of the present appeal.

## VII. ARGUMENT

### PATENTABILITY OF ALL PENDING CLAIMS 42-70

Independent claim 42 generally features a method comprising steps of "monitoring for an occurrence of an event associated with operation of a distributed data storage system, characterizing the event as a usage event related to a usage rate of said system or a non-usage event not related to a usage rate of said system, adjusting a parameter of the data storage system when the event is characterized as a usage event, and executing a diagnostic routine when the event is characterized as a non-usage event." Independent claims 55 and 69 generally set forth similar language.

The Applicant respectfully submits that these claims are patentable on the following bases.

A. HANNAGAN '362 FAILS TO EXPLICITLY OR INHERENTLY DISCLOSE A STEP OF "EXECUTING A DIAGNOSTIC ROUTINE"

In order to establish a *prima facie* case of anticipation under §102, each limitation of the claim must be found to be identically arranged in a single prior art reference, either explicitly or via inherency. *In re Bond*, 15 USPQ2d 1566 (Fed. Cir. 1990); MPEP 2131. A limitation is "inherently" present only if the skilled artisan would "necessarily" find it present in the cited reference. *Continental Can v. Monsanto*, 20 USPQ2d 1746 (Fed. Cir. 1991); MPEP 2112.

In the present case, Hannagan '362 is silent with regard to disclosing "executing a diagnostic routine when the event is characterized as a non-usage event," as claimed by independent claim 42.

The Examiner found this step to be disclosed by operation of the OP module 22 of Hannagan '362 in generating "alarms for potential error conditions." Final Office Action, page 3, lines 7-10 and Hannagan '362, para [0081]. This is respectfully traversed.

The term "executing a diagnostic routine" is a term of art and is to be construed by the Office as the ordinary and customary meaning that would be assigned by a skilled artisan in view of the written description. *Phillips v. AWH Corporation*, 75 USPQ2d 1321 (Fed. Cir. 2005)(*en banc*); MPEP 2111.01. From the specification, it is readily apparent that "diagnostic routine" cannot be expanded to describe the mere generation of an alarm.

For example, the specification states as follows:

*At step 318, one or more diagnostic functions may be performed. Such diagnostics may include various read and write tests, and may include adjustment of operating parameters such as read channel filtering, gain, servo and tracking feedback, and the like to determine operating condition and margin. Embodiments of the present invention are not limited to a specific type of diagnostic and advantageously may*

employ diagnostic routines employed during a manufacturing process.  
Specification, page 11, lines 22-28 (emphasis added)

The skilled artisan would understand the foregoing excerpt as describing a number of different types of operations that are carried out to diagnose a system condition. Read and write tests are given as illustrative examples of such diagnostics that may be executed.

The above excerpt also generally refers to a possible “*adjustment of operating parameters*” that may occur as a result of the execution of the diagnostic routine. The specification thus makes a clear distinction between a diagnostic and the mere setting or adjustment of a parameter.

It follows that “*diagnostic routine*” is used in the written description in accordance with the skilled artisan’s ordinary and customary usage of the term, and merely generating an alarm in view of a potential error condition would not be reasonably viewed as “*execution of a diagnostic routine.*”

The Examiner has nevertheless sustained the rejection on the basis that generating an alarm is viewed as being “comparable to the proposed claim limitation in question.” Final Office Action, page 18, lines 11-16.

The Applicant traverses this on the basis that an alarm is not in fact comparable to a diagnostic routine; these are entirely different things which may or may not involve the other. Both could be carried out in succession, and each could be carried out without the other.

More importantly, though, the Applicant traverses this on the basis that “comparability” is immaterial to a valid anticipation analysis. As stated above, in order to establish a prima facie case of anticipation, each of the limitations of the claim must be

explicitly or inherently present in the cited reference as claimed. “Comparability” simply does not form a portion of this test.

In order for a valid anticipation analysis to be applied to the claims, the first question is whether the “generating an alarm” operation of Hannagan ‘362 explicitly discloses “*executing a diagnostic routine*” as claimed by claim 42. The answer is clearly no, and this is supported by the Examiner’s guarded use of the term “comparable” in describing these respective operations.

The next question is whether the skilled artisan would view the “generating an alarm” operation of Hannagan ‘362 as inherently disclosing “*executing a diagnostic routine*” as set forth by claim 42. The answer is also clearly no, since the skilled artisan would not find such a diagnostic routine to be necessarily executed as a result of an alarm, or *vice versa*.

At best, the generation of an alarm as disclosed by Hannagan ‘362 might signal a need to subsequently execute a diagnostic routine in order to assess the state of the system, but it need not do so and Hannagan ‘362 is silent on this point. The alarm itself would not constitute the diagnostic. Indeed, as a result of the alarm, all that would be known is that a “possible error condition” may be present.

Finally, there is nothing that indicates that the alarms of Hannagan ‘362 relied upon by the Examiner are set “*when the event is characterized as a non-usage event,*” as further set forth by claim 42. As previously pointed out to the Examiner, there is no disclosed nexus between the managing of billing events by the Event Rater and Pricer (ERP) 16 and the generation of alarms by the OP module 22. This further shows that the Examiner failed to take the actual claim language into account when evaluating the patentability thereof.

Accordingly, the Examiner has failed to apply the legal test for anticipation in favor of a new test that examines whether a particular limitation is "comparable." The rejection is therefore improper *as a matter of law*, and constitutes reversible error. Reconsideration and withdrawal of the rejection of all of the claims pending in the application are requested on this basis.

**B. HANNAGAN '362 FAILS TO EXPLICITLY OR INHERENTLY DISCLOSE A STEP OF "ADJUSTING A PARAMETER OF THE DATA STORAGE SYSTEM"**

Hannagan '362 further fails to disclose a step of "adjusting a parameter of the data storage system when the event is characterized as a usage event," as featured by independent claim 42.

The Examiner found this step to be disclosed by the storing of data in the Billing Event Database by the ERP module 16. See Final Office Action, page 3, lines 4-6 and Hannagan '362, para [0196]. The Examiner further expanded the basis for the rejection by referring to para [0198] of Hannagan '362. Final Office Action, page 18, lines 3-9. This additional reference to Hannagan '362, however, failed to clarify the basis for the rejection.

This latter portion of Hannagan '362 states as follows:

*"ERP 16 interacts with both external and internal interfaces. It collects raw usage events from different network elements 28. ERP 16 also supports external interfaces to receive events from external carriers and value-added service providers, and internal interfaces to other subsystems for billing events, such as adjustments."* Hannagan '362, para. [0198], lines 1-6.

As discussed in the Applicant's Response filed September 12, 2006, It remains unclear whether the Examiner is asserting that the "adjusting" step is met by the storing of

data to the Billing Event Database, or whether the Examiner is asserting the “adjusting” step is met by one or more of the aforementioned operations. Indeed, the rejection may be based on the fact that the term “adjustments” appears in the above excerpt. Regardless, under any of these circumstances the Examiner has failed to establish *prima facie* anticipation.

The term “*adjusting a parameter*” of a data storage system is a term of art and is to be construed in accordance with the ordinary and customary meaning that would be attributed by the skilled artisan in view of the written description. *Phillips, Supra*; MPEP 2111.01. The term is discussed in the specification including as follows:

*If step 308 determines that the event is a usage event, the process continues at the [sic] 310 where system operating parameters are adjusted. Such adjustments may include changing cache sizes, queuing algorithms, data mapping, or other parameters. For example, in a web server, a particular web page may become popular and a large number of requests for data may be received. Access rates to a drive or set of drives that exceeds desired optimum usage models may generate a usage threshold event. Adjustments performed in step 310 may allocate additional cache to drives storing the web page data, may move or copy (duplicate) portions of the data to other drives, or may reduce the rate at which read requests for the data are serviced. Adjustments may include changing the format of stored data, such as from RAID-5 to RAID-1, for example, to affect read performance. Additionally, less used data may be converted from RAID-1 to RAID-5 to provide additional storage capacity. Procedures may also include “throttling” of read requests to produce a “cooling down” period for drive heads. The adjustments described are exemplary and embodiments of the present invention may employ any adjustments that tailor system operation to that of an optimal usage model. Specification, page 10, lines 10-29 (emphasis added)*

From the foregoing excerpt the skilled artisan would readily view the term “adjusting a parameter” of a data storage system in accordance with its ordinary and customary meaning as adjusting a parameter in order to tailor system performance.

The mere storing of data to a database would not be viewed by the skilled artisan as “adjusting a parameter” as claimed.

The various operations set forth in para [0198] by the ERP in terms of interacting with interfaces or collecting raw billing events would not be viewed by the skilled artisan as “adjusting a parameter” as claimed.

The handling of “billing adjustments” would not be viewed by the skilled artisan as “adjusting a parameter” as claimed.

Accordingly, the Examiner has failed to establish a *prima facie* case of anticipation on the basis that it remains unclear what operation is believed to be carried out by the ERP that results in the recited “*adjustment of a parameter*.” Moreover, none of the proffered examples can in any way be fairly characterized as meeting the “*adjustment of a parameter*” claim language, either explicitly or via inherency. The rejection is therefore improper on these bases as well.

C. HANNAGAN ‘362 FAILS TO EXPLICITLY OR INHERENTLY DISCLOSE THE “USAGE RATE” LANGUAGE OF THE “CHARACTERIZING STEP”

Claim 42 further generally features a step of “characterizing the event as a usage event related to a usage rate of said system or a non-usage event not related to a usage rate of said system.” Hannagan ‘362 is silent with regard to disclosing this step as well.

As discussed in the Applicant’s previous response, the Examiner asserted this step was met by the operation of the event rater and pricer (ERP) module 16. More specifically, the Examiner found the disclosed “usage event” processed by the ERP 16 to correspond to the recited “*usage event related to a usage rate*” of claim 42, and found the disclosed “non-

usage event" processed by the ERP 16 to correspond to the recited "*non-usage event not related to a usage rate*" of claim 42. See Office Action, page 3, lines 1-3 and para [0196] of Hannagan '362.

This is respectfully traversed on the basis that Hannagan '362 is silent with regard to disclosing a "usage rate" of the system. The disclosed usage events and non-usage events of Hannagan '362 are merely disclosed as being "a provider's usage and non-usage events." See Hannagan '362, para [0196].

The Examiner appears to agree that Hannagan '362 fails to disclose a "usage rate" as claimed, stating "*Hannagan does not refer to being related to a usage rate, therefore Hannagan teaches the limitation of 'not being related to a usage rate.'*" Final Office Action, page 17, line 21 to page 18, line 2, emphasis added. No further clarification was provided after this inconsistency was identified to the Examiner (see Advisory Action mailed September 26, 2006).

The Applicant therefore remains at a loss as to how the Examiner can on the one hand admit that Hannagan '362 fails to disclose a usage rate, and yet assert that Hannagan '362 discloses "*a usage event related to a usage rate of the system,*" as claimed. Reconsideration and withdrawal of the rejection are further requested on this basis.

### Conclusion

For the foregoing reasons, it is believed that rejected claims 42-70 stand patentably distinct over the cited references. The rejection of independent claims 42, 55 and 59 is improper on the following bases:

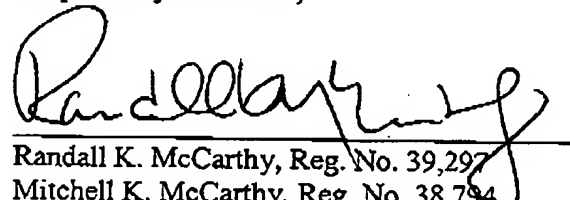


- A. Hannagan '362 fails to disclose a step of "executing a diagnostic routine" as claimed;
- B. Hannagan '362 fails to disclose a step of "adjusting a parameter" as claimed; and
- C. Hannagan '362 fails to disclose a "usage rate" as claimed.

The Applicant therefore respectfully prays the Board reconsider and direct passage to allowance of all pending claims 42-70.

Respectfully submitted,

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VIII. CLAIMS APPENDIX

Claims 1-41 (Cancelled).

42. (Previously presented) A method comprising steps of monitoring for an occurrence of an event associated with operation of a distributed data storage system, characterizing the event as a usage event related to a usage rate of said system or a non-usage event not related to a usage rate of said system, adjusting a parameter of the data storage system when the event is characterized as a usage event, and executing a diagnostic routine when the event is characterized as a non-usage event.

43. (Previously presented) The method of claim 42, wherein the event is characterized as a scheduling condition associated with an elapsed period of time irrespective of usage rate of said system over said elapsed period of time, and wherein the scheduling condition is characterized by the characterizing step as a non-usage event.

44. (Previously presented) The method of claim 42, wherein the event is characterized as a scheduling condition associated with completion of a predetermined number of I/O data accesses by said system, and wherein the scheduling condition is characterized by the characterizing step as a usage event.

45. (Previously presented) The method of claim 42, wherein the event is characterized as a threshold event wherein an operating parameter has a value outside a predetermined

threshold range, and wherein the scheduling condition is characterized by the characterizing step as a usage event.

46. (Previously presented) The method of claim 42, wherein the event is characterized as a threshold event wherein an operating parameter has a value outside a predetermined threshold range, and wherein the scheduling condition is characterized by the characterizing step as a non-usage event.

47. (Previously presented) The method of claim 42, wherein the parameter adjusted during the adjusting step comprises an available amount of write cache memory for storing data to be written to storage media of said system.

48. (Previously presented) The method of claim 42, wherein the parameter adjusted during the adjusting step comprises an operational level of a disc array of said system.

49. (Previously presented) The method of claim 42, further comprising a step of copying a content of a first memory location to a second memory location in said system prior to the executing step.

50. (Previously presented) The method of claim 49, wherein the content of the first memory location comprises user data arranged in a first format, and wherein the copying step further comprises arranging said user data in a different second format in the second memory location.

51. (Previously presented) The method of claim 49, wherein the content of the first memory location comprises the diagnostic routine executed during the executing step.

52. (Previously presented) The method of claim 42, further comprising a step of performing a component adjustment in said system in response to a result obtained during the executing step.

53. (Previously presented) The method of claim 52, wherein the performing and executing steps are sequentially repeated to arrive at a final component adjustment in said system.

54. (Previously presented) The method of claim 42, further comprising steps of copying a content of a first memory location to a second memory location in said system prior to the executing step, and restoring the content to the first memory location after the executing step.

55. (Previously presented) A distributed data storage system comprising at least one processor having associated programming to monitor for an occurrence of an event associated with operation of said system, to characterize the event as a usage event related to a usage rate of said system or a non-usage event not related to a usage rate of said system, to adjust a parameter of the data storage system when the event is characterized as a usage event, and to execute a diagnostic routine when the event is characterized as a non-usage event.

56. (Previously presented) The system of claim 55, wherein the event is characterized as a scheduling condition associated with an elapsed period of time irrespective of usage rate of said system over said elapsed period of time, and wherein the scheduling condition is characterized as a non-usage event.

57. (Previously presented) The system of claim 55, wherein the event is characterized as a scheduling condition associated with completion of a predetermined number of I/O data accesses by said system, and wherein the scheduling condition is characterized as a usage event.

58. (Previously presented) The system of claim 55, wherein the event is characterized as a threshold event wherein an operating parameter has a value outside a predetermined threshold range, and wherein the scheduling condition is characterized as a usage event.

59. (Previously presented) The system of claim 55, wherein the event is characterized as a threshold event wherein an operating parameter has a value outside a predetermined threshold range, and wherein the scheduling condition is characterized as a non-usage event.

60. (Previously presented) The system of claim 55, wherein the parameter adjusted during the adjusting step comprises an available amount of write cache memory for storing data to be written to storage media of said system.

61. (Previously presented) The system of claim 55, wherein the parameter adjusted by the at least one processor comprises an operational level of a disc array of said system.

62. (Previously presented) The system of claim 55, wherein the at least one processor further copies a content of a first memory location to a second memory location in said system prior to executing said diagnostic routine.

63. (Previously presented) The system of claim 55, wherein the content of the first memory location comprises user data arranged in a first format, and wherein the at least one processor further arranges said user data in a different second format in the second memory location.

64. (Previously presented) The system of claim 55, wherein the content of the first memory location comprises the diagnostic routine executed by said at least one processor.

65. (Previously presented) The system of claim 55, wherein a first processor from said at least one processor carries out said monitoring operation, and wherein a second processor from said at least one processor carries out said adjusting and executing operations.

66. (Previously presented) The system of claim 55, wherein the at least one processor further performs a component adjustment in said system in response to a result obtained during the execution of the diagnostic routine.

67. (Previously presented) The system of claim 66, wherein the performing and executing operations are sequentially repeated to arrive at a final component adjustment in said system.

68. (Previously presented) The system of claim 55, wherein the at least one processor further copies a content of a first memory location to a second memory location in said system prior to the execution of the diagnostic routine, and restores the content to the first memory location after the execution of the diagnostic routine.

69. (Previously presented) An apparatus comprising a distributed data storage system comprising a host system, a storage controller, a plurality of data storage devices, and first means for monitoring for an occurrence of an event associated with operation of a distributed data storage system, for characterizing the event as a usage event related to a usage rate of said system or a non-usage event not related to a usage rate of said system, for adjusting a parameter of the data storage system when the event is characterized as a usage event, and for executing a diagnostic routine when the event is characterized as a non-usage event.

70. (Previously presented) The apparatus of claim 69, wherein the first means comprises at least one processor with associated programming code in a memory location.

### **IX. EVIDENCE APPENDIX**

No additional evidence is included.

### **X. RELATED PROCEEDINGS APPENDIX**

There exist no relevant related proceedings concerning this Appeal before the Board.